

REMARKS

Applicants respectfully request reconsideration of the present application in view of the foregoing amendments and in view of the reasons that follow.

Claims 1 and 11 are currently being amended, claim 2 is currently being canceled, and new claim 23 is currently being added. A detailed listing of all claims that are, or were, in the application, irrespective of whether the claim(s) remain under examination in the application, is presented, with an appropriate defined status identifier. After amending the claims as set forth above, claims 1 and 3-22 are now pending in this application.

Claim Objections

Claim 11 are objected because of an informality. Claim 11 has been amended such that the term, “lasts,” in line 2 has been replaced with “salts.” Originally filed claim 11 recited “salts” in the English translation of the international application at page 15, line 24.

Claim Rejections Under 35 U.S.C. § 102

Claims 1, 2, 4, 7-11 and 13-15 are rejected under 35 U.S.C. § 102(b) as being anticipated by Chen et al., “Structure, sintering behavior and dielectric properties of silica-coated BaTiO₃.” Applicants request withdrawal of these rejections for the following reasons.

Independent claim 1 has been amended to recite “the fluid being maintained at a pressure above about 10 bar and at a temperature above about 10°C.” Support for this amendment can be shown in the English translation of the international application at page 4, lines 15-21. Although Chen discloses a fluid comprising water at room temperature and a pH value lower than 12 (see page 316, Section 2.2.1), this reference is silent as to the pressure. Because this reference does not disclose fluid maintained at a pressure above 10 bar, it does not anticipate independent claim 1. Accordingly, dependent claims 4, 7-11 and 13-15 are not anticipated by Chen from their dependence from independent claim 1.

Claim Rejections Under 35 U.S.C. § 103

Claim 5

Claim 5 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen et al., “Structure, sintering behavior and dielectric properties of silica-coated BaTiO₃.” Applicants request withdrawal of this rejection for the following reason.

As mentioned above, Chen does not disclose fluid maintained at a pressure above 10 bar. As a result, Chen does not render dependent claim 5 unpatentable.

Claims 3, 6, 12, 21 and 22

Claims 3, 6, 12, 21 and 22 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Chen et al., “Structure, sintering behavior and dielectric properties of silica-coated BaTiO₃” in view of Berneburg et al. (US 4,552,786). Applicants request withdrawal of these rejections for the following reasons.

The Office Action in Item 11, page 7, indicates that Berneburg teaches a method of infiltrating a porous ceramic with a fluid containing a solvent and a precursor to a ceramic in which the fluid is kept under supercritical conditions to enhance infiltration and precipitation into the pores (see Abstract). The Office Action further states that this method could also be used to infiltrate a fluid containing a solvent into a ceramic powder. The Office Action then concludes that it would have been obvious of one of ordinary skill in the art to modify the method taught by Chen with the method of Berneburg.

No Use of a Known Technique to Improve a Similar Process in the Same Way

However, in the method disclosed by Chen, the required structure of the coating film is obtained by controlling the pH value of the solution and concentration of silica in the solution (see page 316, Section 3.2.2). Pressure is not considered as a control parameter in sol-gel processes. Therefore, controlling the pressure of the solution would not provide any improvement in the coating process of Chen. Because of the lack of improvement as a function of pressure, there is no finding that one of ordinary skill in the art could have applied

the "improvement" technique of Berneburg (i.e., supercritical fluids) in the same way to the "base" method of Chen (i.e., the sol-gel coating process) and the results would have been predictable to one of ordinary skill in the art. *See* MPEP § 2143 C. (3). Because this finding cannot be made, then this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. *See id.*

No Simple Substitution of One Known Element for Another to Obtain Predictable Results

Moreover, in Berneburg, a low density ceramic body is infiltrated with a supercritical fluid containing a ceramic precursor. Berneburg states that the highly permeative nature of supercritical fluids allows for much easier infiltration (penetration) of smaller openings in ceramic material and can thus improve the densification of ceramic bodies (see column 2, lines 12-16). However, there is no disclosure in Berneburg that such supercritical fluids improve precipitation contrary to the Office Action.

In fact, in Berneburg, there is no chemical reaction between the precursor and the ceramic body. For example, the supercritical fluid (propane) is only used for leading the precursor inside the ceramic body (see column 3, lines 25-31). The precursor is simply "trapped" into the pores of the ceramic body while the fluid is eliminated (by releasing pressure), leaving the precursor inside the ceramic (see column 3, lines 25-31).

In Chen, there is no need to improve infiltration because the solution containing free particles is stirred so as to ensure good mixing between the particles and the water containing silica (see page 315, Section 2.1 and page 316, Section 3.2.1). This mixing results in specific chemical reactions between the barium titanate and the silica precursor in order to form a coating layer over particles (see page 316, Section 3.2.2).

Therefore, there is no finding that one of ordinary skill in the art could have substituted one known element (i.e., fluid at ambient conditions) for another (fluid at supercritical conditions), and the results of the substitution would have been predictable; *See* MPEP § 2143 B. (3). Because this finding cannot be made, this rationale cannot be used to support a conclusion that the claim would have been obvious to one of ordinary skill in the art. *See id.*

Conclusion

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.

The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check or credit card payment form being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. § 1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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